



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,453	10/22/2003	Masato Yamada	SUG-174-USAP	4848
28892	7590	04/27/2005	EXAMINER	
SNIDER & ASSOCIATES P. O. BOX 27613 WASHINGTON, DC 20038-7613			KEBEDE, BROOK	
			ART UNIT	PAPER NUMBER
			2823	

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/690,453

Applicant(s)

YAMADA ET AL.

Examiner

Brook Kebede

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-90 is/are pending in the application.
- 4a) Of the above claim(s) 1-18, 34-48 and 58-79 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-33, 49-57 and 80-90 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/22/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicants' election without traverse of Group II, Claims 19-33, 49-57 and 80-90 in the reply filed on March 4, 2005 is acknowledged.

2. Accordingly, Claims 1-18, 34-48, 58-79 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 4, 2005.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

4. Claims 19, 20, 22 and 88 are objected to because of the following informalities:

Claim 19 recites "layer **intended** for becoming the contact layer," in lines 17-18 and 27-28 respectively. However, the recited claim lacks clarity in its meaning and scope because the phrase "intended" is indefinite since the "intention" is not definite action whether the layer is designed to function certain way.

Similarly the phrase "intended" is used in claims 20, 22 and 88. However, the recited claim lacks clarity in its meaning and scope because the phrase "intended" is indefinite since the "intention" is not definite action whether the layer is designed to function certain way.

Claim 20 recites the limitation "to diffuse **In** form the ITO layer" and "**In**-containing GaAs layer" in lines 6 and 10 respectively. The examiner respectfully suggests changing "**In**" to --indium (In)-- and "**In**-containing" to --indium-containing-- respectively in order to maintain

Art Unit: 2823

clarity throughout the claim language. Similar change also should be made for claims 55 and 57.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-18, 34-48, 58-79 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Although an attempt has been made to identify all instances of claim language non-compliance, such identification is extremely burdensome due to the large number of instances. Examples are provided herein below. Since such noncompliance confuses the claims to the extent that not all of the problems are readily apparent, then upon amendment, if an alternative interpretation of claim language requires a change in the rejection, the new rejection may properly be made final.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

In addition, for example:

There is lack of clarity for “substrate-bonding conductive oxide layer” as recited in claims 19, 21, 22, 49, 80 and throughout the rest of pending claims because it is not clear in the claims which ITO layer is being claimed. Is it ITO layer 10 ? or Is it ITO layer 20 ? Since these

Art Unit: 2823

layers are formed different places in different process steps, it is important to distinguish these layers by the term such as “first” and “second” or by process so that there will be no ambiguity.

There is also lack of clarity for “contact layer” or “metal layer” as recited in claims 19, 21, 22, 49, 80 and throughout the rest of pending claims because it is not clear in the claims which “contact layer” or “metal layer” is specifically being claimed since there is more than one (i.e., three contact (metal) layers) is being formed in different places in different process steps.

There is also lack of clarity for “light-emitting-layer growing substrate” or “conductive substrate” as recited in claims 19, 21, 22, 49, 80 and throughout the rest of pending claims because it is not clear in the claims which “light-emitting-layer growing substrate” or “conductive substrate” is specifically being claimed since there is more than one substrate is being formed in different places in different process steps.

Claim 88 recites the limitation “the bonding-side surface being **assumed** as the main surface” in lines 5-6. However, the phrase “assumed” cause the claim great deal of confusion because “assumption” is not a definite term so that the scope cannot be determined.

Claims 20, 23-33, 50-57 and 81-90 also rejected for the same reasons as stated above and also rejected as being directly or indirectly dependent of the rejected base claims.

Applicants’ cooperation is requested in reviewing the claims structure to ensure proper claim construction and to correct any subsequently discovered instances of claim language noncompliance. See *Morton International Inc.*, 28USPQ2d 1190, 1195 (CAFC, 1993).

In light of the rejection 35 U.S.C. § 112 second Paragraph that set forth herein above, the following 35 U.S.C. 102 rejection is based on prior art which reads on the

Art Unit: 2823

interpretation the claim language of the instant application as best as understood by the Examiner. See *Ex parte Ionescu*, 222 USPQ 537 (Bd. Pat. App. & Inter. 1984).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 19, 22-26, 30, 49-52 and 54 are rejected under 35 U.S.C. 102(e) as being anticipated by Furukawa et al. (US/6,465,809).

Re claim 19, Furukawa et al. disclose a method of fabricating a light-emitting device comprising: forming an epitaxially grown light-emitting layer (54 55 56) (i.e., AlGaInP epitaxial layer) (see Figs. 5A-5F) over a first substrate (51 52) (i.e. GaAs transparent substrate) (see Fig. 5A); forming a contact layer (61) (i.e., a Au layer which capable of reducing the junction resistance) (see Fig. 5F) over the light-emitting layer via a second substrate (60); forming a conductive oxide layer (i.e., ITO layer) over the contact layer (61) (see Fig. 5F); and separating the first substrate (51 52) (see Fig. 5C and 5D) (see Figs. 5A – 5F and related text in Col. 16, line 31 – Col. 17, line 27).

Re claim 22, Furukawa et al. disclose a method of fabricating a light-emitting device comprising: forming a light-emitting layer (54 55 56) (i.e., AlGaInP epitaxial layer) (see Figs. 5A-5F) over a first substrate (51 52) (i.e. GaAs transparent substrate) (see Fig. 5A); separating light-emitting layer (54 55 56) from the first substrate (51 52) (see Figs. 5C and 5D); forming a

Art Unit: 2823

transparent conductive oxide layer (62) (i.e., ITO layer 62 is also transparent electrode and used for applying voltage to layers 54 55 56) over the light-emitting layer (54 55 56); forming a contact layer (61) (i.e., a Au layer which capable of reducing the junction resistance) (see Figs. 5A – 5F and related text in Col. 16, line 31 – Col. 17, line 27).

Re claim 23, as applied to claim 22 above, Furukawa et al. disclose all the claimed limitations including bonding of the second conductive substrate (60) to the light-emitting layer (54 55 56) on the opposite surface the light-emitting layer (54 55 56) that the first conductive substrate (51 52) was bonded to (see Figs. 5A – 5F and related text in Col. 16, line 31 – Col. 17, line 27).

Re claim 24, as applied to claim 23 above, Furukawa et al. disclose all the claimed limitations including the limitation wherein the second conductive substrate is bonded to the light-emitting layer portion while placing a metal layer intended for a reflective layer in between to (see Figs. 5A – 5F and related text in Col. 16, line 31 – Col. 17, line 27).

Re claim 25, as applied to claim 24 above, Furukawa et al. disclose all the claimed limitations including the limitation wherein the conductive substrate is a metal substrate (i.e., GaP) (see Figs. 5A – 5F and related text in Col. 16, line 31 – Col. 17, line 27).

Re claim 26, as applied to claim 24 above, Furukawa et al. disclose all the claimed limitations including the limitation wherein the reflective layer is an Au-base metal layer (see Figs. 5A – 5F and related text in Col. 16, line 31 – Col. 17, line 27).

Re claim 30, as applied to claim 24 above, Furukawa et al. disclose all the claimed limitations including the limitation wherein the transparent conductive oxide layer is an ITO layer (see Figs. 5A – 5F and related text in Col. 16, line 31 – Col. 17, line 27).

Art Unit: 2823

Re claim 49, Furukawa et al. disclose a method of fabricating a light-emitting device comprising: a sequential step of forming a light-emitting layer (54 55 56) (i.e., AlGaInP epitaxial layer) (see Figs. 5A-5F) over a first substrate (51 52) (i.e. GaAs transparent substrate) (see Fig. 5A); separating light-emitting layer (54 55 56) from the first substrate (51 52) (see Figs. 5C and 5D); forming a metal layer (61) (i.e., a Au layer which capable of reducing the junction resistance) over the light-emitting layer (54 55 56); forming a transparent conductive oxide layer (62) (i.e., ITO layer 62 is also transparent electrode and used for applying voltage to layers 54 55 56) over the metal layer (61) (see Figs. 5A – 5F and related text in Col. 16, line 31 – Col. 17, line 27).

Re claim 50, as applied to claim 49 above, Furukawa et al. disclose all the claimed limitations including the limitation wherein the bonding step is responsible for bonding between the bonding-use transparent conductive oxide layer and the metal layer (see Figs. 5A – 5F and related text in Col. 16, line 31 – Col. 17, line 27).

Re claim 51, as applied to claim 49 above, Furukawa et al. disclose all the claimed limitations including the limitation wherein, after the bonding, a portion of the metal layer in contact with the bonding-use transparent conductive oxide layer is composed of an Au-base metal layer (see Figs. 5A – 5F and related text in Col. 16, line 31 – Col. 17, line 27).

Re claim 52, as applied to claim 51 above, Furukawa et al. disclose all the claimed limitations including the limitation wherein the bonding-use transparent conductive oxide layer is an ITO layer, and the portion of the metal layer in contact with the bonding-use transparent conductive oxide layer is an Sn-containing, Au-base metal layer (see Figs. 5A – 5F and related text in Col. 16, line 31 – Col. 17, line 27).

Art Unit: 2823

Re claim 54, as applied to claim 49 above, Furukawa et al. disclose all the claimed limitations including the limitation further comprising a contact layer forming step for forming a contact layer for reducing junction resistance of the bonding-use transparent conductive oxide layer on the first main surface side of the light-emitting layer portion prior to the bonding-use transparent conductive oxide layer forming step (see Figs. 5A – 5F and related text in Col. 16, line 31 – Col. 17, line 27).

Remarks

9. Claims 20, 21, 27-29, 31, 32, 53 and 80-90 have not been rejected over the prior art because, in light of the 35 U.S.C. 112 rejections *supra*, there is a great deal of confusion and uncertainty as to the proper interpretation of the limitations of the claims; hence, it would not be proper to reject the claims on the basis of prior art. As stated in *In re Steele*, 305 F.2d 859, 134 USPQ 292 (CCPA 1962), **a rejection under 35 U.S.C. 103** should not be based on considerable speculation about the meaning of terms employed in a claim or assumptions that must be made as to the scope of the claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Jou et al. (US/5,481,122) and Ito et al. (US/6,426,512) also disclose similar inventive subject matter.

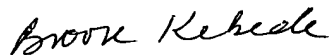
Correspondence

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brook Kebede whose telephone number is (571) 272-1862. The examiner can normally be reached on 8-5 Monday to Friday.

Art Unit: 2823

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (571) 272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Brook Kebede
Examiner
Art Unit 2823

BK
April 23, 2005